Valve gate systems
Needle actuator

GÜNTER needle actuators enable precise and intelligent needle control with simple installation and connection technology. Uniform opening of the individual valve gate nozzles enables a reliable injection moulding process, even with the smallest shot weights.

1. Fast and powerful servo drive
   For valve gate systems, up to 24 drops per sliding mechanism. Needle adjustment in the µ range. Needles close in less than 0.2 s. Can be used in clean rooms.

2. Sliding components with special coating
   Protected against wear, can be replaced by the customer.

ANES SLIDING MECHANISM

If a large number of closely positioned nozzles are being operated, a sliding mechanism is to be provided as the drive. Design of moulds with a high number of drops with small mould dimensions. High product quality, as all cavities are filled evenly through the synchronised opening and closing of the needles. Adjustment of the needle position when mounted on the machine.

Possible drive types:
- Electrical
- Hydraulic
- Pneumatic

THE ADVANTAGES AT A GLANCE

- Precise opening and closing
- Reliable injection process
- Individual cavities can be shut off
- Optimally adjusted needle
- Precise and intelligent needle control
- All moving parts can be replaced by the customer
- Saves time
ENV AND EEV SINGLE-NEEDLE VALVE

Single-needle actuation on single- and multi-drop nozzle systems. Cascade injection moulding through the sequential opening and closing of needles is possible. Single-needle valve is mounted with the housing in the clamping plate. **ENV single-needle valve**: Minimum cavity spacing with hydraulic drive: 48 mm, with pneumatic drive: 69 mm. Needle adjustment or needle replacement without removing the mould. **EEV single-needle valve**: Minimum cavity spacing with hydraulic drive: 40 mm, with pneumatic drive: 57 mm. Due to a fixed needle length, needle adjustment is only possible with the mould disassembled.

Possible drive types: Hydraulic Pneumatic

ANEH STROKE MECHANISM

Reliable injection process, even with small shot weights thanks to uniform opening and closing of the needles. Replacement of the external cylinder without removal of the mould. Adjustment of the needle position in the assembled mould.

Possible drive types: Hydraulic Pneumatic Electrical

SMA 10 STEPPER MOTOR

Electric drive for complex applications with up to four different needle positions per cycle. Up to 16 SMA 10 stepper motors can be controlled with extreme precision using the DPE control unit. Using the DPE control unit, the position of each individual shut-off needle in the mould can be set individually. Needle adjustment in the range of 1/100 mm. Can be used in clean rooms.

Drive type: Electrical

NEST SINGLE VALVE GATE NOZZLE

The pneumatically driven NEST valve gate nozzle offers optimum process reliability when processing high-quality, demanding materials. Melt channel diameters from 5 to 12 mm and a length of up to 250 mm enable a variety of different injection moulded part and mould designs.

Drive type: Pneumatic
## 3.5 Needle actuator

### SINGLE-NEEDLE DRIVE

<table>
<thead>
<tr>
<th>Model</th>
<th>Drive Configuration</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-needle valve ENV2/ENV3</td>
<td>Pneumatic drive, with housing</td>
<td>30</td>
</tr>
<tr>
<td>Single-needle valve ENV2/ENV3</td>
<td>Hydraulic drive, with housing</td>
<td>40</td>
</tr>
<tr>
<td>Single-needle valve ENV5</td>
<td>Pneumatic drive, with housing</td>
<td>50</td>
</tr>
<tr>
<td>Single-needle valve ENV5</td>
<td>Hydraulic drive, with housing</td>
<td>60</td>
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<tr>
<td>Single-needle valve EEV2/EEV3</td>
<td>Pneumatic drive, with housing</td>
<td>70</td>
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<tr>
<td>Single-needle valve EEV2/EEV3</td>
<td>Hydraulic drive, with housing</td>
<td>80</td>
</tr>
<tr>
<td>Stepper motor SMA 10</td>
<td>Electric drive</td>
<td>100</td>
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</table>

### MULTI-NEEDLE DRIVE

<table>
<thead>
<tr>
<th>Model</th>
<th>Drive Configuration</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stroke mechanism ANEH</td>
<td>Pneumatic/hydraulic drive</td>
<td>110</td>
</tr>
<tr>
<td>Sliding mechanism ANES</td>
<td>Electric/pneumatic/hydraulic drive</td>
<td>220</td>
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</tbody>
</table>
Overview of overall design
for needle actuator

- Clamping plate
- Nozzle holding plate
- Plug-in type power and thermocouple plug connections
- Cavity plate
Clamping plate

Plug-in type thermocouple and power plug connections

Nozzle holding plate

Cavity plate
Single-needle valve ENV2/ENV3
Pneumatic drive, with housing

TECHNICAL DATA

ENV2/10/L/G
Nozzle Ød 4–5 mm
Drive type pneumatic
Operating pressure min. 6 bar air intake at ENV

ENV3/10/L/G
Nozzle Ød 5–10 mm
Drive type pneumatic
Operating pressure min. 6 bar air intake at ENV

NOTE
- Adjustable needle
- Maximum usage temperature: 100 °C
INSTALLATION WITH HOUSING

Pneumatic needle drive ENV2/ENV3

Clamping plate / Frame plate

sharp-edged

INSTALLATION WITH HOUSING

We reserve the right to make technical changes.
**Single-needle valve ENV2/ENV3**
Hydraulic drive, with housing

**TECHNICAL DATA**

<table>
<thead>
<tr>
<th>Model</th>
<th>Nozzle Ød</th>
<th>Drive type</th>
<th>Operating pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ENV2/10/O/G</strong></td>
<td>4–5 mm</td>
<td>hydraulic</td>
<td>40–60 bar oil intake at ENV</td>
</tr>
<tr>
<td><strong>ENV3/10/O/G</strong></td>
<td>5–10 mm</td>
<td>hydraulic</td>
<td>40–60 bar oil intake at ENV</td>
</tr>
</tbody>
</table>

**NOTE**
- Adjustable needle
- Maximum usage temperature: 80 °C
- Hydraulic cylinders and the entire hydraulic system are to be carefully vented before commissioning

**WEB CODE**
34020

3.5.40

We reserve the right to make technical changes. 07/18
Single-needle valve ENV5
Pneumatic drive, with housing

**TECHNICAL DATA**

**ENV5/10/L/G**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
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<tbody>
<tr>
<td>Nozzle Ød</td>
<td>10–12 mm</td>
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<tr>
<td>Drive type</td>
<td>pneumatic</td>
</tr>
<tr>
<td>Operating pressure</td>
<td>min. 6 bar air intake at ENV</td>
</tr>
</tbody>
</table>

**NOTE**

- Adjustable needle
- Maximum usage temperature: 100 °C
INSTALLATION WITH HOUSING

Clamping plate / Frame plate

sharp-edged

We reserve the right to make technical changes.

3.5.50
Single-needle valve ENV5
Hydraulic drive, with housing

**TECHNICAL DATA**

<table>
<thead>
<tr>
<th>ENV5/10/O/G</th>
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</thead>
<tbody>
<tr>
<td>Nozzle Ød</td>
<td>10–12 mm</td>
</tr>
<tr>
<td>Drive type</td>
<td>hydraulic</td>
</tr>
<tr>
<td>Operating pressure</td>
<td>40–60 bar oil intake at ENV</td>
</tr>
</tbody>
</table>

**NOTE**

- Adjustable needle
- Maximum usage temperature: 80 °C
- Hydraulic cylinders and the entire hydraulic system are to be carefully vented before commissioning
INSTALLATION WITH HOUSING

Clamping plate / Frame plate

sharp-edged

6 x M6

Hydraulic needle drive ENV5

INSTALLATION WITH HOUSING

We reserve the right to make technical changes.
Single-needle valve EEV2/EEV3
Pneumatic drive, with housing

**TECHNICAL DATA**

**EEV2/10/L/G**
- **Nozzle Ød**: 4–5 mm
- **Drive type**: pneumatic
- **Operating pressure**: min. 6 bar air intake at ENV

**EEV3/10/L/G**
- **Nozzle Ød**: 5–10 mm
- **Drive type**: pneumatic
- **Operating pressure**: min. 6 bar air intake at ENV

**NOTE**
- Non-adjustable needle
- Maximum usage temperature: 100 °C
Single-needle valve EEV2/EEV3
Hydraulic drive, with housing

TECHNICAL DATA

<table>
<thead>
<tr>
<th></th>
<th>EEV2/10/O/G</th>
<th>EEV3/10/O/G</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nozzle Ød</td>
<td>4–5 mm</td>
<td>5–10 mm</td>
</tr>
<tr>
<td>Drive type</td>
<td>hydraulic</td>
<td>hydraulic</td>
</tr>
<tr>
<td>Operating pressure</td>
<td>40–60 bar oil intake at ENV</td>
<td>40–60 bar oil intake at ENV</td>
</tr>
</tbody>
</table>

NOTE
- Non-adjustable needle
- Maximum usage temperature: 80°C
- Hydraulic cylinders and the entire hydraulic system are to be carefully vented before commissioning

WEBCODE 34060
INSTALLATION WITH HOUSING

- **Detail K**: Hydraulic needle drive EEV2/EEV3

- **Installation with Housing**

- **Dimensions and Notes**:
  - Not dimensioned chamfers 0.5 x 45°
  - Close needle
  - Open needle
  - **Hydraulic needle drive EEV2/EEV3**
  - **INSTALLATION WITH HOUSING**

- **Technical Note**: We reserve the right to make technical changes.
Overview of overall design
for needle actuator – stepper motor SMA 10
Clamping plate
Frame plate
Intermediate plate
Plug-in type power and thermocouple plug connections
Nozzle plate
Cavity plate
**Stepper motor SMA 10**

Electric drive

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**TECHNICAL DATA**

<table>
<thead>
<tr>
<th>Stepper motor SMA 10</th>
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</thead>
<tbody>
<tr>
<td>Nozzle Ød</td>
</tr>
<tr>
<td>Drive type</td>
</tr>
<tr>
<td>Operating voltage</td>
</tr>
</tbody>
</table>

*Volts alternating current

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**NOTE**

- Adjustable needle

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**WEBCODE**

34070